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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/925,601
Filing Date: August 10, 2001
Appellant(s): HOSOYAMADA, SHUNICHI

Frederick E. Cooperrider
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed November 03, 2006 appealing from the Office action mailed October 27, 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,790,092 MORIYAMA 8-98

APPLICANT ADMITED PRIOR ART; Pages 1-7, Figuures 12-16

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-18, 25-42, 49-51, 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art, hereinafter AAPA (page 1-7 and Figs. 12-16), in view of Moriyama (U. S. Patent No. 5,790,092).

In reference to claim 1, the AAPA discloses an LCD in Fig. 12 in which a liquid crystal display cell is mounted at an intersection of a plurality of scanning electrodes and placed at a specified intervals in a row direction and each of a plurality of signal electrodes plated at specified interval in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of the signal electrode, after having reversed the polarity of the data signal Sd based on the polarity reversing pulse POL, feeds each of them to each of corresponding signal electrodes 43 (page 3, lines 5-28).

However, the AAPA does not discloses the circuit for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode... Moriyama discloses 13 A and 13 B a method for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode...

It would have been obvious for one of ordinary skill in the art at the time of the invention was made to provide method of Moriyama for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode in the AAPA because it would provide a method for providing a liquid crystal display permitting an effectively reduced power dissipation in signal generation (col. 7, line 65 – col. 8, line 2)

In reference to claims 2-3, the AAPA discloses the three color filters are arranged as claimed (see Fig. 13).

In reference to claim 4, the AAPA disclose the arrangement of four-dot pixel arranged in a quadrangular form as claimed (AAPA page 5, lines 4-9).

In reference to claims 5- 6, the AAPA discloses that the LCD 41 of Fig. 12 is an active matrix color using, for example, a TFT (Thin Film Transistor).

In reference to claim 7, refer to the rejection as applied to claim 1. In addition, Moriyama discloses the image data related to for displaying monochromatic data (col. 2, lines 45-46) and The image data may comprise a chromatic or monochromatic data and a luminance data which may include a gray background component (Fig. 12, col. 11 – col. 12, line 5). In addition, the

waveform in Fig. 12 satisfying the claimed limitation of displaying a monochromatic color by reversing a data signal that changes, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, sequentially into a first signal having a first potential of a first polarity (first and second positive polarity of signals VS1 in frame 1) and a second signal having a second potential of said first polarity and into a first signal having a first potential of a second polarity and a second signal having a second potential of said second polarity (first and second negative polarity signals of VS1 in frame 1), for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes.

In reference to claims 8-9, refer to the rejections as applied to claims 2-3.

In reference to claim 10, refer to the rejection as applied to claim 4.

In reference to claims 11-12, refer to the rejection as applied to claim 5-6.

In reference to claim 13, refer to the rejection as applied to claim 1. Moriyama discloses the j-th source drive signal Sj appears as a j-th image signal VSj (not shown for j>2). The image signals each have a transient voltage level representative of a processed image data for the liquid crystal, substantially within a range of 0V to +10V, i.e., 5V.+-.5V. The image data may comprise a chromatic or monochromatic data and a luminance data which may include a gray background component (Fig. 12, col. 11 – col. 12, line 5).

In reference to claims 14-18, refer to the rejections as applied to claims 2-6.

In reference to claims 49, the AAPA discloses an LCD in Fig. 12 in which a liquid crystal display having driving circuitry (42 and 52) and cell is mounted at an intersection of a plurality of scanning electrodes and placed at a specified intervals in a row direction and each of

a plurality of signal electrodes plated at specified interval in a column direction, by sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of the signal electrode, after having reversed the polarity of the data signal Sd based on the polarity reversing pulse POL, feeds each of them to each of corresponding signal electrodes 43 (page 3, lines 5-28). However, the AAPA does not discloses the circuit for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode... Moriyama discloses 13 A and 13 B a method for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode...

It would have been obvious for one of ordinary skill in the art at the time of the invention was made to provide method of Moriyama for reversing a polarity of each of the data signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode in the AAPA because it would provide a method for providing a liquid crystal display permitting an effectively reduced power dissipation in signal generation and/or effectively reduced vertical striped shades in frame control (col. 7, line 65 – col. 8, line 2)

In reference to claim 50, refer to the rejection as applied to claim 7 due to the claiming driving apparatus for the method applied to claim 7 and therefore are rejected as the same reason set for above.

In reference to claim 51, refer to the rejection as applied to claim 13 due to claiming driving apparatus for the method applied to claim 13 and therefore are rejected as the same reason set for above.

Claims 25-42, are apparatus claims corresponding to the method of claims 1-18, 49-51 and 53 and therefore, rejected based on the same basis set forth in said claims.

Allowable Subject Matter

2. Claims 19-24, 43-48, 52-54 are allowed.

The following is a statement of reasons for the indication of allowable subject matter: None of the cited arts teaches or suggests:

displaying gray-scale color of a monochromatic color by reversing a data signal made up, relative to a common potential being applied to one terminal of all said liquid crystal cells and during four consecutive scanning periods, of combinations of a signal having a potential of a first polarity that corresponds to an intermediate transmittance between maximum and minimum transmittance of said liquid crystal cell of a signal having a potential of a first polarity that corresponds to said minimum transmittance of said liquid crystal cell and of combinations of a signal having a potential of a second polarity that corresponds to said intermediate transmittance between said maximum and minimum transmittance of said liquid crystal cell and of a signal having a potential of said second polarity that corresponds to said minimum transmittance of said liquid crystal cell, for every said signal electrode and by sequentially feeding said data signal having the reversed polarity to each of corresponding said signal electrodes (claims 19 and 43 and 52),

wherein the concurrent uniform reversal of polarity in both said horizontal dimension and said vertical dimension causes a flicker to be at an angle slanted relative to said horizontal dimension and said vertical dimension (claim 53).

A combination of uniform polarity reversal in both said scanning electrodes and said signal electrodes causing a flicker in said liquid crystal display data to be at a slated orientation relative to said scanning electrodes and said signal electrodes (claim 54).

Response to Arguments

Applicant's arguments with respect to claims 1-18, 25-42, 49-51 has been considered but are not persuasive.

With respect to Applicant's argument page 10, as discussed above, the AAPA discloses a conventional LCD display in Fig. 12 that sequentially feeding scanning signals to said plurality of said scanning electrodes and by sequentially feeding data signals to said plurality of the signal electrode, after having reversed the polarity of the data signal Sd based on the polarity reversing pulse POL, feeds each of them to each of corresponding signal electrodes 43 but does not discloses but does not discloses the specific limitation "reversing polarity of each of said data signal .... and reversing a polarity for every said signal electrode in the liquid crystal display. Moriyama discloses the method of reversing polarity that satisfies the claimed limitation and therefore, it would have been obvious for one of ordinary skill in the art at the time of the invention was made to provide method of Moriyama for reversing a polarity of each of the data

signals for every 2n piece of the scanning electrodes and for every the signal electrode in the liquid crystal display and reversing a polarity for every pixel signal electrode in the AAPA because it would provide a method for providing a liquid crystal display permitting an effectively reduced power dissipation in signal generation (col. 7, line 65 – col. 8, line 2).

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., reducing flicker for non-white colors... by slanting the flicker that normally occur...) [see pages 11-12 of the Argument] are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

With respect to the argument "... there is no teaching for "reversing polarity of each of the said data signal for every 2n pieces of scanning electrodes" in the independent claims. The examiner respectfully disagrees, Moriyama discloses in Fig. 13 reversing a polarity of every (+ to -) electrodes of said data signals for every 2n (n=1) pieces of scanning electrodes [2 scanning electrodes : P(1,1); P (2,1)" as required by the independent claims.

The rejection, therefore, is maintained.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Duc Dinh/

Conferees:

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